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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,588	03/29/2004	Kia Silverbrook	BAL80US	9490

24011 7590 09/24/2004

SILVERBROOK RESEARCH PTY LTD  
393 DARLING STREET  
BALMAIN, 2041  
AUSTRALIA

EXAMINER
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GORDON, RAQUEL YVETTE

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/810,588

Applicant(s)

SILVERBROOK, KIA

Examiner

Raquel Y. Gordon

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 3/29/04 (This Application)
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 4-11, 13, 14 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/798714.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/18/2004
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 12, 15, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Silverbrook (US00666933B2).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Silverbrook teaches every element of the instant claims including:

1. An inkjet nozzle assembly comprising:

a nozzle chamber for ink to be ejected, the chamber comprising an ink inlet for fluid communication with an ink reservoir and a nozzle through which ink from the chamber can be ejected (col 4, lines 9-14); and, at least one thermal actuator for contracting the chamber such that ink is ejected through the nozzle (col 5, lns 57-60);

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2. An inkjet nozzle assembly according to claim 1 wherein the chamber has an inlet wall defining the ink inlet (52), a nozzle wall spaced from the inlet wall, the nozzle wall deforming the nozzle (col 5, lns 56-60), and side walls between the inlet wall and the nozzle wall; and, the at least one thermal actuator (150) moves at least one of the side walls to contact the chamber (40);

3. An inkjet nozzle assembly according to claim 2 wherein the chamber has four side walls (102), each of the side walls connected to a respective thermal actuator (150);

12. An ink nozzle assembly for an inkjet printer, the nozzle assembly comprising: a nozzle (100) and an actuator for ejecting ink through said nozzle; wherein, the actuator (54) comprises a resiliently contractable chamber (col 5, lns 57-60);

15. An ink nozzle assembly for an inkjet printer, the nozzle assembly comprising: a nozzle (100); a nozzle chamber (40) for ink to be ejected through the nozzle, the chamber comprising walls (102) configured to define a first volume within the chamber and, at least one actuator (150) for reconfiguring the walls to define a second volume less than the first volume (see fig 3);

17. An inkjet nozzle assembly according to claim 15 wherein the actuator (150) is a thermal actuator (150).

***Allowable Subject Matter***

Claims 4-11, 13, 14, and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons for Indication of Allowability***

The following claim limitations are allowable since the prior art does not teach the claimed limitation of pushes the arcuate vanes to slidingly engage each other to contract the chamber, wherein said contractable chamber comprises at least one slidable wall, wherein said at least one wall is a side wall and is slidable by thermal actuation, or wherein the walls comprise slidable side walls that reconfigure to define the second volume in response to the actuator.

4. An inkjet nozzle assembly according to claim 3 wherein the four side walls are arcuate vane arranged around a central axis, and the thermal actuators are expanding, flexible arms such that simultaneous actuation of the arms pushes the arcuate vanes to slidingly engage each other to contract the chamber;

5. An inkjet nozzle assembly according to claim 4 wherein said flexible expanding arms compose a conductive heater material encased within an expansion material having a high coefficient of thermal expansion;

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6. An inkjet nozzle assembly according to claim 5 wherein said conductive heater material is constructed so as to form a concertina upon expansion of said expansion material;

7. An inkjet nozzle assembly according to claim 5 wherein said heater material is of a serpentine form and forms a concertina upon heating so as to allow substantially unhindered expansion of said expansion material during heating;

8. An inkjet nozzle assembly according to claim 5 wherein said vanes are arranged annularly around said nozzle;

9. An inkjet nozzle assembly according to claim 5 wherein said vanes operate as an iris around said nozzle;

10. An inkjet nozzle assembly according to claim 5 wherein said expansion material comprises substantially polytetrafluoroethylene;

11. An inkjet nozzle assembly according to claim 5 wherein said conductive heater material comprises substantially copper;

13. An inkjet nozzle assembly according to claim 12 comprises wherein said contractable chamber comprises at least one slidable wall;

14. An inkjet nozzle assembly according to claim 5 wherein said at least one wall is a side wall and is slidable by thermal actuation;

16. An inkjet nozzle assembly according to claim 15 wherein the walls comprise slidable side walls that reconfigure to define the second volume in response to the actuator.

Further, the dependant claims are objected to since they depend from objected to base claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

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**In the Specification:**

On page 1, deleted, line 1.

On page 1, after the Title, inserted --This is a continuation of copending application number 09/798714, filed on March 2, 2001, now Patent No. 6,712,453, issued March 30, 2004.--

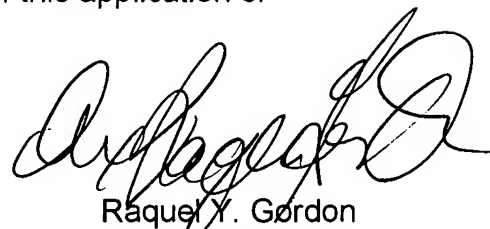
This amendment was made in order to place the Application in proper form.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Raquel Y. Gordon, whose telephone number is (571) 272-2145. The Examiner can normally be reached on M Tu Th and F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. A fax number is available upon request.

Any inquiry of a general nature or relating to the status of this application or proceeding may be directed to the Examiner or Supervisor.



Raquel Y. Gordon  
Primary Examiner  
Art Unit 2853  
September 14, 2004